

#5



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<141> November 16, 1999

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Asp His Cys Asp Pro Lys Ile Ile His Arg Asp Val Lys Ala Ala Asn  
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Asp Pro Asp His Val Leu Gln Ser Trp Asp Pro Thr Leu Val Asn Pro  
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150 155 160																
atc cca agc ctt aaa gtt gtt gac gtc tca agc aat gat ttg tgt gga																643
Ile Pro Ser Leu Lys Val Val Asp Val Ser Ser Asn Asp Leu Cys Gly																180
165 170 175 180																
aca atc cca aca aac gga ccc ttt gct cac att cct tta cag aac ttt																691
Thr Ile Pro Thr Asn Gly Pro Phe Ala His Ile Pro Leu Gln Asn Phe																195
185 190 195																
gag aac aac ccg aga ttg gag gga ccg gaa tta ctc ggt ctt gca agc																739
Glu Asn Asn Pro Arg Leu Glu Gly Pro Glu Leu Leu Gly Leu Ala Ser																210
200 205 210																

tac gac act aac tgc acc tgaacaact ggcaaacct gaaaatgaag 787  
 Tyr Asp Thr Asn Cys Thr  
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aattgggggg tgaccttgta agaacacttc accactttat caaatatcac atctattatg 847  
 taataagtat atatatgtag taaaaacaaa aaaaatgaag aatcgaatcg gtaatatcat 907  
 ctgggtctcaa ttgagaactt cgaggtctgt atgtaaaatt tctaaatgcg attttcgcct 967  
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 Ala Leu Tyr Ala Leu Arg Arg Ser Leu Thr Asp Pro Asp His Val Leu  
 35 40 45  
 Gln Ser Trp Asp Pro Thr Leu Val Asn Pro Cys Thr Trp Phe His Val  
 50 55 60  
 Thr Cys Asn Gln Asp Asn Arg Val Thr Arg Val Asp Leu Gly Asn Ser  
 65 70 75 80  
 Asn Leu Ser Gly His Leu Ala Pro Glu Leu Gly Lys Leu Glu His Leu  
 85 90 95  
 Gln Tyr Leu Glu Leu Tyr Lys Asn Asn Ile Gln Gly Thr Ile Pro Ser  
 100 105 110  
 Glu Leu Gly Asn Leu Lys Asn Leu Ile Ser Leu Asp Leu Tyr Asn Asn  
 115 120 125  
 Asn Leu Thr Gly Ile Val Pro Thr Ser Leu Gly Lys Leu Lys Ser Leu  
 130 135 140  
 Val Phe Leu Arg Leu Asn Asp Asn Arg Leu Thr Gly Pro Ile Pro Arg  
 145 150 155 160  
 Ala Leu Thr Ala Ile Pro Ser Leu Lys Val Val Asp Val Ser Ser Asn  
 165 170 175  
 Asp Leu Cys Gly Thr Ile Pro Thr Asn Gly Pro Phe Ala His Ile Pro  
 180 185 190  
 Leu Gln Asn Phe Glu Asn Asn Pro Arg Leu Glu Gly Pro Glu Leu Leu

195

200

205

Gly Leu Ala Ser Tyr Asp Thr Asn Cys Thr  
210 215

&lt;210&gt; 26

&lt;211&gt; 789

&lt;212&gt; DNA

&lt;213&gt; unknown

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (2) .. (661)

&lt;400&gt; 26

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Arg Pro Thr Arg Pro Arg Asn Tyr Arg Trp Glu Leu Phe Ala Ala Ser  
1 5 10 15

tta atc cta acc tta gct ttg att cac ctg gtc gaa gca aac tcc gaa 97  
Leu Ile Leu Thr Leu Ala Leu Ile His Leu Val Glu Ala Asn Ser Glu  
20 25 30

gga gat gct ctt tac gct ctt cgc cgg agt tta aca gat ccg gac cat 145  
Gly Asp Ala Leu Tyr Ala Leu Arg Arg Ser Leu Thr Asp Pro Asp His  
35 40 45

gtt ctc cag agc tgg gat cca act ctt gtt aat cct tgt acc tgg ttc 193  
Val Leu Gln Ser Trp Asp Pro Thr Leu Val Asn Pro Cys Thr Trp Phe  
50 55 60

cat gtc acc tgt aac caa gac aac cgc gtc act cgt gtg gat ttg ggg 241  
His Val Thr Cys Asn Gln Asp Asn Arg Val Thr Arg Val Asp Leu Gly  
65 70 75 80

aat tca aac ctc tct gga cat ctt gcg cct gag ctt ggg aag ctt gaa 289  
Asn Ser Asn Leu Ser Gly His Leu Ala Pro Glu Leu Gly Lys Leu Glu  
85 90 95

cat tta cag tat cta gag ctc tac aaa aac aac atc caa gga act ata 337  
His Leu Gln Tyr Leu Glu Leu Tyr Lys Asn Asn Ile Gln Gly Thr Ile  
100 105 110

cct tcc gaa ctt gga aat ctg aag aat ctc atc agc ttg gat ctg tac 385  
Pro Ser Glu Leu Gly Asn Leu Lys Asn Leu Ile Ser Leu Asp Leu Tyr  
115 120 125

aac aac aat ctt aca ggg ata gtt ccc act tct ttg gga aaa ttg aag 433  
Asn Asn Asn Leu Thr Gly Ile Val Pro Thr Ser Leu Gly Lys Leu Lys  
130 135 140

tct ctg gtc ttt tta cgg ctt aat gac aac cga ttg acg ggg cca atc 481  
Ser Leu Val Phe Leu Arg Leu Asn Asp Asn Arg Leu Thr Gly Pro Ile  
145 150 155 160

cct aga gca ctc act gca atc cca agc ctt aaa gtt gtt gat gtc tca 529  
Pro Arg Ala Leu Thr Ala Ile Pro Ser Leu Lys Val Val Asp Val Ser  
165 170 175  
  
agc aat gat ttg tgt gga aca atc cca aca aac gga cct ttt gct cac 577  
Ser Asn Asp Leu Cys Gly Thr Ile Pro Thr Asn Gly Pro Phe Ala His  
180 185 190  
  
att cct tta cag aac ttt gag aac aac ccg agg ttg gag gga ccg gaa 625  
Ile Pro Leu Gln Asn Phe Glu Asn Asn Pro Arg Leu Glu Gly Pro Glu  
195 200 205  
  
tta ctc ggt ctt gca agc tac gac act aac tgc acc tgaaaaaatt 671  
Leu Leu Gly Leu Ala Ser Tyr Asp Thr Asn Cys Thr  
210 215 220  
  
ggcaaaacct gaaaatgaag aattggggggg tgaccttgta agaacacttc accactttat 731  
  
caaatatcac atctactatg taataagtat atatatgtag tccaaaaaaa aaaaaaaaa 789

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Gly Asp Ala Leu Tyr Ala Leu Arg Arg Ser Leu Thr Asp Pro Asp His  
35 40 45  
  
Val Leu Gln Ser Trp Asp Pro Thr Leu Val Asn Pro Cys Thr Trp Phe  
50 55 60  
  
His Val Thr Cys Asn Gln Asp Asn Arg Val Thr Arg Val Asp Leu Gly  
65 70 75 80  
  
Asn Ser Asn Leu Ser Gly His Leu Ala Pro Glu Leu Gly Lys Leu Glu  
85 90 95  
  
His Leu Gln Tyr Leu Glu Leu Tyr Lys Asn Asn Ile Gln Gly Thr Ile  
100 105 110  
  
Pro Ser Glu Leu Gly Asn Leu Lys Asn Leu Ile Ser Leu Asp Leu Tyr  
115 120 125  
  
Asn Asn Asn Leu Thr Gly Ile Val Pro Thr Ser Leu Gly Lys Leu Lys  
130 135 140  
  
Ser Leu Val Phe Leu Arg Leu Asn Asp Asn Arg Leu Thr Gly Pro Ile  
145 150 155 160

Pro Arg Ala Leu Thr Ala Ile Pro Ser Leu Lys Val Val Asp Val Ser  
165 170 175

Ser Asn Asp Leu Cys Gly Thr Ile Pro Thr Asn Gly Pro Phe Ala His  
180 185 190

Ile Pro Leu Gln Asn Phe Glu Asn Asn Pro Arg Leu Glu Gly Pro Glu  
195 200 205

Leu Leu Gly Leu Ala Ser Tyr Asp Thr Asn Cys Thr  
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agc tta tca gat cca gac aat gtt gtt cag agt tgg gat cca act ctt 96  
Ser Leu Ser Asp Pro Asp Asn Val Val Gln Ser Trp Asp Pro Thr Leu  
20 25 30

gtt aat cct tgt act tgg ttt cat gtc act tgt aat caa cac cat caa 144  
Val Asn Pro Cys Thr Trp Phe His Val Thr Cys Asn Gln His His Gln  
35 40 45

gtc act cgt ctg gat ttg ggg aat tca aac tta tct gga cat cta gta 192  
Val Thr Arg Leu Asp Leu Gly Asn Ser Asn Leu Ser Gly His Leu Val  
50 55 60

cct gaa ctt ggg aag ctt gaa cat tta caa tat ctg tat gga atc atc 240  
Pro Glu Leu Gly Lys Leu Glu His Leu Gln Tyr Leu Tyr Gly Ile Ile  
65 70 75 80

act ctt ttg cct ttt gat tat ctg aaa aca ttt aca tta tca gtc aca 288  
Thr Leu Leu Pro Phe Asp Tyr Leu Lys Thr Phe Thr Leu Ser Val Thr  
85 90 95

cat ata aca ttt tgc ttt gag tca tat agt gaa ctc tac aaa aac gag 336  
His Ile Thr Phe Cys Phe Glu Ser Tyr Ser Glu Leu Tyr Lys Asn Glu  
100 105 110

att caa gga act ata cct tct gag ctt gga aat ctg aag agt cta atc 384  
Ile Gln Gly Thr Ile Pro Ser Glu Leu Gly Asn Leu Lys Ser Leu Ile  
115 120 125

agt ttg gat ctg tac aac aac aat ctc acc ggg aaa atc cca tct tct 432

Ser Leu Asp Leu Tyr Asn Asn Asn Leu Thr Gly Lys Ile Pro Ser Ser  
 130 135 140

ttg gga aaa ttg aag tca ctt gtt ttt ttg cgg ctt aac gaa aac cga 480  
 Leu Gly Lys Leu Lys Ser Leu Val Phe Leu Arg Leu Asn Glu Asn Arg  
 145 150 155 160

ttg acc ggt cct att cct aga gaa ctc aca gtt att tca agc ctt aaa 528  
 Leu Thr Gly Pro Ile Pro Arg Glu Leu Thr Val Ile Ser Ser Leu Lys  
 165 170 175

gtt gtt gat gtc tca ggg aat gat ttg tgt gga aca att cca gta gaa 576  
 Val Val Asp Val Ser Gly Asn Asp Leu Cys Gly Thr Ile Pro Val Glu  
 180 185 190

gga cct ttt gaa cac att cct atg caa aac ttt gag aac aac ctg aga 624  
 Gly Pro Phe Glu His Ile Pro Met Gln Asn Phe Glu Asn Asn Leu Arg  
 195 200 205

ttg gag gga cca gaa cta cta ggt ctt gcg agc tat gac acc aat tgc 672  
 Leu Glu Gly Pro Glu Leu Leu Gly Leu Ala Ser Tyr Asp Thr Asn Cys  
 210 215 220

act taaaaagaag ttgaagaacc tataaagaag aatgttaggt gaccttgtaa 725  
 Thr  
 225

gaactctgta ccaagtgttt gtaaactctat atagagcctt gtttcatggt atatatgaaa 785

gctttgagag acagtaactt gcaatgtatt ggtattggta gaaaaagttg aaatgagaat 845

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 35 40 45

Val Thr Arg Leu Asp Leu Gly Asn Ser Asn Leu Ser Gly His Leu Val  
 50 55 60

Pro Glu Leu Gly Lys Leu Glu His Leu Gln Tyr Leu Tyr Gly Ile Ile  
 65 70 75 80

Thr Leu Leu Pro Phe Asp Tyr Leu Lys Thr Phe Thr Leu Ser Val Thr  
 85 90 95



His Ile Thr Phe Cys Phe Glu Ser Tyr Ser Glu Leu Tyr Lys Asn Glu  
 100 105 110  
 Ile Gln Gly Thr Ile Pro Ser Glu Leu Gly Asn Leu Lys Ser Leu Ile  
 115 120 125  
 Ser Leu Asp Leu Tyr Asn Asn Asn Leu Thr Gly Lys Ile Pro Ser Ser  
 130 135 140  
 Leu Gly Lys Leu Lys Ser Leu Val Phe Leu Arg Leu Asn Glu Asn Arg  
 145 150 155 160  
 Leu Thr Gly Pro Ile Pro Arg Glu Leu Thr Val Ile Ser Ser Leu Lys  
 165 170 175  
 Val Val Asp Val Ser Gly Asn Asp Leu Cys Gly Thr Ile Pro Val Glu  
 180 185 190  
 Gly Pro Phe Glu His Ile Pro Met Gln Asn Phe Glu Asn Asn Leu Arg  
 195 200 205  
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 Thr  
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 <212> DNA  
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 <222> (106) .. (759)

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 caaattccta ttagattact ctctcttcga cctccgatag ctcac atg gcg tct cga 117  
 Met Ala Ser Arg  
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aac tat cgg tgg gag ctc ttc gca gct tcg tta atc cta acc tta gct 165  
 Asn Tyr Arg Trp Glu Leu Phe Ala Ala Ser Leu Ile Leu Thr Leu Ala  
 5 10 15 20  
 ttg att cac ctg gtc gaa gca aac tcc gaa gga gat gct ctt tac gct 213  
 Leu Ile His Leu Val Glu Ala Asn Ser Glu Gly Asp Ala Leu Tyr Ala  
 25 30 35  
 ctt cgc cgg agt tta aca gat ccg gac cat gtt ctc cag agc tgg gat 261  
 Leu Arg Arg Ser Leu Thr Asp Pro Asp His Val Leu Gln Ser Trp Asp  
 40 45 50

cca act ctt gtt aat cct tgt acc tgg ttc cat gtc acc tgt aac caa	309
Pro Thr Leu Val Asn Pro Cys Thr Trp Phe His Val Thr Cys Asn Gln	
55 60 65	
gac aac cgc gtc act cgt gtg gat ttg ggg aat tca aac ctc tct gga	357
Asp Asn Arg Val Thr Arg Val Asp Leu Gly Asn Ser Asn Leu Ser Gly	
70 75 80	
cat ctt gcg cct gag ctt ggg aag ctt gaa cat tta cag tat cta gag	405
His Leu Ala Pro Glu Leu Gly Lys Leu Glu His Leu Gln Tyr Leu Glu	
85 90 95 100	
ctc tac aaa aac aac atc caa gga act ata cct tcc gaa ctt gga aat	453
Leu Tyr Lys Asn Asn Ile Gln Gly Thr Ile Pro Ser Glu Leu Gly Asn	
105 110 115	
ctg aag aat ctc atc agc ttg gat ctg tac aac aac aat ctt aca ggg	501
Leu Lys Asn Leu Ile Ser Leu Asp Leu Tyr Asn Asn Asn Leu Thr Gly	
120 125 130	
ata gtt ccc act tct ttg gga aaa ttg aag tct ctg gtc ttt tta cgg	549
Ile Val Pro Thr Ser Leu Gly Lys Leu Lys Ser Leu Val Phe Leu Arg	
135 140 145	
ctt aat gac aac cga ttg acg ggg cca atc cct aga gca ctc act gca	597
Leu Asn Asp Asn Arg Leu Thr Gly Pro Ile Pro Arg Ala Leu Thr Ala	
150 155 160	
atc cca agc ctt aaa gtt gtt gat gtc tca agc aat gat ttg tgt gga	645
Ile Pro Ser Leu Lys Val Val Asp Val Ser Ser Asn Asp Leu Cys Gly	
165 170 175 180	
aca atc cca aca aac gga cct ttt gct cac att cct tta cag aac ttt	693
Thr Ile Pro Thr Asn Gly Pro Phe Ala His Ile Pro Leu Gln Asn Phe	
185 190 195	
gag aac aac ccg agg ttg gag gga ccg gaa tta ctc ggt ctt gca agc	741
Glu Asn Asn Pro Arg Leu Glu Gly Pro Glu Leu Leu Gly Leu Ala Ser	
200 205 210	
tac gac act aac tgc acc tgaaaaaatt ggcaaaacct gaaaatgaag	789
Tyr Asp Thr Asn Cys Thr	
215	
aattgggggg tgaccttgta agaacacttc accactttat caaatatcac atctactatg	849
taataagtat atatatgtag tccaaaaaaa aaatgaagaa tcgaatcagt aatatcatct	909
ggctctcaatt gagaactttg aggtctgtgt atgtaaaatt tctaaatgcg actttcgcgt	969
actgtaatgt tcggttggtg gattctgaga agtaacattt gtattggtat ggtatcaagt	1029
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 <212> PRT  
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<400> 31

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Ala	Leu	Tyr	Ala	Leu	Arg	Arg	Ser	Leu	Thr	Asp	Pro	Asp	His	Val	Leu
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Gln	Ser	Trp	Asp	Pro	Thr	Leu	Val	Asn	Pro	Cys	Thr	Trp	Phe	His	Val
	50					55					60				
Thr	Cys	Asn	Gln	Asp	Asn	Arg	Val	Thr	Arg	Val	Asp	Leu	Gly	Asn	Ser
65					70					75					80
Asn	Leu	Ser	Gly	His	Leu	Ala	Pro	Glu	Leu	Gly	Lys	Leu	Glu	His	Leu
				85					90					95	
Gln	Tyr	Leu	Glu	Leu	Tyr	Lys	Asn	Asn	Ile	Gln	Gly	Thr	Ile	Pro	Ser
		100						105					110		
Glu	Leu	Gly	Asn	Leu	Lys	Asn	Leu	Ile	Ser	Leu	Asp	Leu	Tyr	Asn	Asn
		115					120					125			
Asn	Leu	Thr	Gly	Ile	Val	Pro	Thr	Ser	Leu	Gly	Lys	Leu	Lys	Ser	Leu
		130					135				140				
Val	Phe	Leu	Arg	Leu	Asn	Asp	Asn	Arg	Leu	Thr	Gly	Pro	Ile	Pro	Arg
145					150					155					160
Ala	Leu	Thr	Ala	Ile	Pro	Ser	Leu	Lys	Val	Val	Asp	Val	Ser	Ser	Asn
			165						170					175	
Asp	Leu	Cys	Gly	Thr	Ile	Pro	Thr	Asn	Gly	Pro	Phe	Ala	His	Ile	Pro
			180					185					190		
Leu	Gln	Asn	Phe	Glu	Asn	Asn	Pro	Arg	Leu	Glu	Gly	Pro	Glu	Leu	Leu
		195					200					205			
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<210> 32  
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 <212> DNA  
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<220>  
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 <222> (195)..(2069)

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attttcggaa gttagggttt tctcggatct gaagagatca aatcaagatt cgaaatttac 180  
cattgttggt tgaa atg gag tcg agt tat gtg gtg ttt atc tta ctt tca 230  
Met Glu Ser Ser Tyr Val Val Phe Ile Leu Leu Ser  
1 5 10  
ctg atc tta ctt ccg aat cat tca ctg tgg ctt gct tct gct aat ttg 278  
Leu Ile Leu Leu Pro Asn His Ser Leu Trp Leu Ala Ser Ala Asn Leu  
15 20 25  
gaa ggt gat gct ttg cat act ttg agg gtt act cta gtt gat cca aac 326  
Glu Gly Asp Ala Leu His Thr Leu Arg Val Thr Leu Val Asp Pro Asn  
30 35 40  
aat gtc ttg cag agc tgg gat cct acg cta gtg aat cct tgc aca tgg 374  
Asn Val Leu Gln Ser Trp Asp Pro Thr Leu Val Asn Pro Cys Thr Trp  
45 50 55 60  
ttc cat gtc act tgc aac aac gag aac agt gtc ata aga gtt gat ttg 422  
Phe His Val Thr Cys Asn Asn Glu Asn Ser Val Ile Arg Val Asp Leu  
65 70 75  
ggg aat gca gag tta tct ggc cat tta gtt cca gag ctt ggt gtg ctc 470  
Gly Asn Ala Glu Leu Ser Gly His Leu Val Pro Glu Leu Gly Val Leu  
80 85 90  
aag aat ttg cag tat ttg gag ctt tac agt aac aac ata act ggc ccg 518  
Lys Asn Leu Gln Tyr Leu Glu Leu Tyr Ser Asn Asn Ile Thr Gly Pro  
95 100 105  
att cct agt aat ctt gga aat ctg aca aac tta gtg agt ttg gat ctt 566  
Ile Pro Ser Asn Leu Gly Asn Leu Thr Asn Leu Val Ser Leu Asp Leu  
110 115 120  
tac tta aac agc ttc tcc ggt cct att ccg gaa tca ttg gga aag ctt 614  
Tyr Leu Asn Ser Phe Ser Gly Pro Ile Pro Glu Ser Leu Gly Lys Leu  
125 130 135 140  
tca aag ctg aga ttt ctc cgg ctt aac aac aac agt ctc act ggg tca 662  
Ser Lys Leu Arg Phe Leu Arg Leu Asn Asn Asn Ser Leu Thr Gly Ser  
145 150 155  
att cct atg tca ctg acc aat att act acc ctt caa gtg tta gat cta 710  
Ile Pro Met Ser Leu Thr Asn Ile Thr Thr Leu Gln Val Leu Asp Leu  
160 165 170  
tca aat aac aga ctc tct ggt tca gtt cct gac aat ggc tcc ttc tca 758  
Ser Asn Asn Arg Leu Ser Gly Ser Val Pro Asp Asn Gly Ser Phe Ser  
175 180 185  
ctc ttc aca ccc atc agt ttt gct aat aac tta gac cta tgt gga cct 806

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190						195					200						
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Val	Thr	Ser	His	Pro	Cys	Pro	Gly	Ser	Pro	Pro	Phe	Ser	Pro	Pro	Pro		
205					210					215					220		
cct	ttt	att	caa	cct	ccc	cca	ggt	tcc	acc	ccg	agt	ggg	tat	ggt	ata	902	
Pro	Phe	Ile	Gln	Pro	Pro	Pro	Val	Ser	Thr	Pro	Ser	Gly	Tyr	Gly	Ile		
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Thr	Gly	Ala	Ile	Ala	Gly	Gly	Val	Ala	Ala	Gly	Ala	Ala	Leu	Pro	Phe		
			240					245					250				
gct	gct	cct	gca	ata	gcc	ttt	gct	tgg	tgg	cga	cga	aga	agc	cca	cta	998	
Ala	Ala	Pro	Ala	Ile	Ala	Phe	Ala	Trp	Trp	Arg	Arg	Arg	Ser	Pro	Leu		
		255					260					265					
gat	att	ttc	ttc	gat	gtc	cct	gcc	gaa	gaa	gat	cca	gaa	ggt	cat	ctg	1046	
Asp	Ile	Phe	Phe	Asp	Val	Pro	Ala	Glu	Glu	Asp	Pro	Glu	Val	His	Leu		
	270					275					280						
gga	cag	ctc	aag	agg	ttt	tct	ttg	cgg	gag	cta	caa	gtg	gcg	agt	gat	1094	
Gly	Gln	Leu	Lys	Arg	Phe	Ser	Leu	Arg	Glu	Leu	Gln	Val	Ala	Ser	Asp		
285					290					295					300		
ggg	ttt	agt	aac	aag	aac	att	ttg	ggc	aga	ggg	ggg	ttt	ggg	aaa	gtc	1142	
Gly	Phe	Ser	Asn	Lys	Asn	Ile	Leu	Gly	Arg	Gly	Gly	Phe	Gly	Lys	Val		
			305					310						315			
tac	aag	gga	cgc	ttg	gca	gac	gga	act	ctt	ggt	gct	gtc	aag	aga	ctg	1190	
Tyr	Lys	Gly	Arg	Leu	Ala	Asp	Gly	Thr	Leu	Val	Ala	Val	Lys	Arg	Leu		
			320					325					330				
aag	gaa	gag	cga	act	cca	ggg	gga	gag	ctc	cag	ttt	caa	aca	gaa	gta	1238	
Lys	Glu	Glu	Arg	Thr	Pro	Gly	Gly	Glu	Leu	Gln	Phe	Gln	Thr	Glu	Val		
	335					340						345					
gag	atg	ata	agt	atg	gca	ggt	cat	cga	aac	ctg	ttg	aga	tta	cga	ggg	1286	
Glu	Met	Ile	Ser	Met	Ala	Val	His	Arg	Asn	Leu	Leu	Arg	Leu	Arg	Gly		
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ttc	tgt	atg	aca	ccg	acc	gag	aga	ttg	ctt	gtg	tat	cct	tac	atg	gcc	1334	
Phe	Cys	Met	Thr	Pro	Thr	Glu	Arg	Leu	Leu	Val	Tyr	Pro	Tyr	Met	Ala		
365					370					375					380		
aat	gga	agt	ggt	gct	tcg	tgt	ctc	aga	gag	agg	cca	ccg	tca	caa	cct	1382	
Asn	Gly	Ser	Val	Ala	Ser	Cys	Leu	Arg	Glu	Arg	Pro	Pro	Ser	Gln	Pro		
				385					390					395			
ccg	ctt	gat	tgg	cca	acg	cgg	aag	aga	atc	gcg	cta	ggc	tca	gct	cga	1430	
Pro	Leu	Asp	Trp	Pro	Thr	Arg	Lys	Arg	Ile	Ala	Leu	Gly	Ser	Ala	Arg		
			400					405					410				
ggg	ttg	tct	tac	cta	cat	gat	cac	tgc	gat	ccg	aag	atc	att	cac	cgt	1478	
Gly	Leu	Ser	Tyr	Leu	His	Asp	His	Cys	Asp	Pro	Lys	Ile	Ile	His	Arg		

415	420	425	
gac gta aaa gca gca aac atc ctc tta gac gaa gaa ttc gaa gcg gtt			1526
Asp Val Lys Ala Ala Asn Ile Leu Leu Asp Glu Glu Phe Glu Ala Val			
430	435	440	
gtt gga gat ttc ggg ttg gca aag ctt atg gac tat aaa gac act cac			1574
Val Gly Asp Phe Gly Leu Ala Lys Leu Met Asp Tyr Lys Asp Thr His			
445	450	455	460
gtg aca aca gca gtc cgt ggc acc atc ggt cac atc gct cca gaa tat			1622
Val Thr Thr Ala Val Arg Gly Thr Ile Gly His Ile Ala Pro Glu Tyr			
	465	470	475
ctc tca acc gga aaa tct tca gag aaa acc gac gtt ttc gga tac gga			1670
Leu Ser Thr Gly Lys Ser Ser Glu Lys Thr Asp Val Phe Gly Tyr Gly			
	480	485	490
atc atg ctt cta gaa cta atc aca gga caa aga gct ttc gat ctc gct			1718
Ile Met Leu Leu Glu Leu Ile Thr Gly Gln Arg Ala Phe Asp Leu Ala			
	495	500	505
cgg cta gct aac gac gac gac gtc atg tta ctt gac tgg gtg aaa gga			1766
Arg Leu Ala Asn Asp Asp Asp Val Met Leu Leu Asp Trp Val Lys Gly			
	510	515	520
ttg ttg aag gag aag aag cta gag atg tta gtg gat cca gat ctt caa			1814
Leu Leu Lys Glu Lys Lys Leu Glu Met Leu Val Asp Pro Asp Leu Gln			
525	530	535	540
aca aac tac gag gag aga gaa ctg gaa caa gtg ata caa gtg gcg ttg			1862
Thr Asn Tyr Glu Glu Arg Glu Leu Glu Gln Val Ile Gln Val Ala Leu			
	545	550	555
cta tgc acg caa gga tca cca atg gaa aga cca aag atg tct gaa gtt			1910
Leu Cys Thr Gln Gly Ser Pro Met Glu Arg Pro Lys Met Ser Glu Val			
	560	565	570
gta agg atg ctg gaa gga gat ggg ctt gcg gag aaa tgg gac gaa tgg			1958
Val Arg Met Leu Glu Gly Asp Gly Leu Ala Glu Lys Trp Asp Glu Trp			
	575	580	585
caa aaa gtt gag att ttg agg gaa gag att gat ttg agt cct aat cct			2006
Gln Lys Val Glu Ile Leu Arg Glu Glu Ile Asp Leu Ser Pro Asn Pro			
	590	595	600
aac tct gat tgg att ctt gat tct act tac aat ttg cac gcc gtt gag			2054
Asn Ser Asp Trp Ile Leu Asp Ser Thr Tyr Asn Leu His Ala Val Glu			
605	610	615	620
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Leu Ser Gly Pro Arg			
	625		

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<400> 33

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Pro Asn His Ser Leu Trp Leu Ala Ser Ala Asn Leu Glu Gly Asp Ala  
20 25 30

Leu His Thr Leu Arg Val Thr Leu Val Asp Pro Asn Asn Val Leu Gln  
35 40 45

Ser Trp Asp Pro Thr Leu Val Asn Pro Cys Thr Trp Phe His Val Thr  
50 55 60

Cys Asn Asn Glu Asn Ser Val Ile Arg Val Asp Leu Gly Asn Ala Glu  
65 70 75 80

Leu Ser Gly His Leu Val Pro Glu Leu Gly Val Leu Lys Asn Leu Gln  
85 90 95

Tyr Leu Glu Leu Tyr Ser Asn Asn Ile Thr Gly Pro Ile Pro Ser Asn  
100 105 110

Leu Gly Asn Leu Thr Asn Leu Val Ser Leu Asp Leu Tyr Leu Asn Ser  
115 120 125

Phe Ser Gly Pro Ile Pro Glu Ser Leu Gly Lys Leu Ser Lys Leu Arg  
130 135 140

Phe Leu Arg Leu Asn Asn Asn Ser Leu Thr Gly Ser Ile Pro Met Ser  
145 150 155 160

Leu Thr Asn Ile Thr Thr Leu Gln Val Leu Asp Leu Ser Asn Asn Arg  
165 170 175

Leu Ser Gly Ser Val Pro Asp Asn Gly Ser Phe Ser Leu Phe Thr Pro  
180 185 190

Ile Ser Phe Ala Asn Asn Leu Asp Leu Cys Gly Pro Val Thr Ser His  
195 200 205

Pro Cys Pro Gly Ser Pro Pro Phe Ser Pro Pro Pro Pro Phe Ile Gln  
210 215 220

Pro Pro Pro Val Ser Thr Pro Ser Gly Tyr Gly Ile Thr Gly Ala Ile  
225 230 235 240

Ala Gly Gly Val Ala Ala Gly Ala Ala Leu Pro Phe Ala Ala Pro Ala  
245 250 255

Ile Ala Phe Ala Trp Trp Arg Arg Arg Ser Pro Leu Asp Ile Phe Phe  
260 265 270

Asp Val Pro Ala Glu Glu Asp Pro Glu Val His Leu Gly Gln Leu Lys  
275 280 285

Arg Phe Ser Leu Arg Glu Leu Gln Val Ala Ser Asp Gly Phe Ser Asn  
 290 295 300  
 Lys Asn Ile Leu Gly Arg Gly Gly Phe Gly Lys Val Tyr Lys Gly Arg  
 305 310 315 320  
 Leu Ala Asp Gly Thr Leu Val Ala Val Lys Arg Leu Lys Glu Glu Arg  
 325 330 335  
 Thr Pro Gly Gly Glu Leu Gln Phe Gln Thr Glu Val Glu Met Ile Ser  
 340 345 350  
 Met Ala Val His Arg Asn Leu Leu Arg Leu Arg Gly Phe Cys Met Thr  
 355 360 365  
 Pro Thr Glu Arg Leu Leu Val Tyr Pro Tyr Met Ala Asn Gly Ser Val  
 370 375 380  
 Ala Ser Cys Leu Arg Glu Arg Pro Pro Ser Gln Pro Pro Leu Asp Trp  
 385 390 395 400  
 Pro Thr Arg Lys Arg Ile Ala Leu Gly Ser Ala Arg Gly Leu Ser Tyr  
 405 410 415  
 Leu His Asp His Cys Asp Pro Lys Ile Ile His Arg Asp Val Lys Ala  
 420 425 430  
 Ala Asn Ile Leu Leu Asp Glu Glu Phe Glu Ala Val Val Gly Asp Phe  
 435 440 445  
 Gly Leu Ala Lys Leu Met Asp Tyr Lys Asp Thr His Val Thr Thr Ala  
 450 455 460  
 Val Arg Gly Thr Ile Gly His Ile Ala Pro Glu Tyr Leu Ser Thr Gly  
 465 470 475 480  
 Lys Ser Ser Glu Lys Thr Asp Val Phe Gly Tyr Gly Ile Met Leu Leu  
 485 490 495  
 Glu Leu Ile Thr Gly Gln Arg Ala Phe Asp Leu Ala Arg Leu Ala Asn  
 500 505 510  
 Asp Asp Asp Val Met Leu Leu Asp Trp Val Lys Gly Leu Leu Lys Glu  
 515 520 525  
 Lys Lys Leu Glu Met Leu Val Asp Pro Asp Leu Gln Thr Asn Tyr Glu  
 530 535 540  
 Glu Arg Glu Leu Glu Gln Val Ile Gln Val Ala Leu Leu Cys Thr Gln  
 545 550 555 560  
 Gly Ser Pro Met Glu Arg Pro Lys Met Ser Glu Val Val Arg Met Leu  
 565 570 575  
 Glu Gly Asp Gly Leu Ala Glu Lys Trp Asp Glu Trp Gln Lys Val Glu  
 580 585 590



Ile Leu Arg Glu Glu Ile Asp Leu Ser Pro Asn Pro Asn Ser Asp Trp  
595 600 605

Ile Leu Asp Ser Thr Tyr Asn Leu His Ala Val Glu Leu Ser Gly Pro  
610 615 620

Arg  
625

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